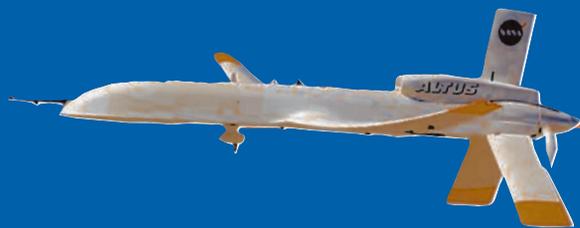


The ALTUS Cumulus Electrification Study (ACES)



Investigation of Thunderstorms
Using Combined UAV and
Ground-Based Measurement Systems

Fact Sheet

Mission Overview

- Three year effort to study thunderstorms using General Atomic's ALTUS UAV
- Exploit unique capabilities of ALTUS to conduct storm studies
- End-to-end experiment encompassing data collection, archival, analysis, and distribution

Key Science

- Investigate lightning relationships and storm morphology
- Provide critical TRMM Lightning Imaging Sensor validation
- Study storm electrical budgets
- Benefit science relevant to NASA Earth Science themes

Experiment Design

- Conduct missions from Key West, Florida to take advantage of cost and resource sharing with another NASA program
- Provide close coordination with ground-based thunderstorm observations to enhance the science return
- Field campaign planned for summer 2002

Demonstration Component

- Demonstrate the utility and promise of UAVs for investigating thunderstorms and other weather phenomena
- Provide demonstration of real-time monitoring and control of UAV science payload

Education and Public Outreach

- Develop interactive science lesson plans at three grade levels to inspire next-generation scientists and engineers
- Support public and education outreach via traditional media and Internet sites

Heritage

- ACES sensors field tested on aircraft and rocket platforms ensuring reliability and performance
- Payload developed and successfully flown as SBIR technology demonstration
- ALTUS derived from UAV system with over 40,000 hours fleet experience

Information

- For information contact Dr. Richard Blakeslee, NASA Marshall Space Flight Center, 256-961-7962, rich.blakeslee@msfc.nasa.gov
- Web page <http://aces.msfc.nasa.gov>